

4.2 Solving Right Triangle Problems

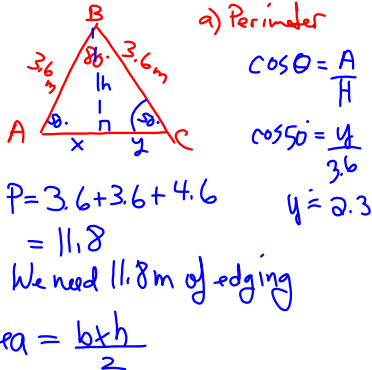
Ex 1:

A triangle garden has two equal sides 3.6 m long and the contained angle of 80° .

(note the angle being held between the two given sides is called a contained angle)

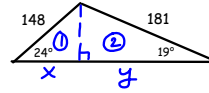
- a) How much edging is needed for the garden?
b) How much area does this garden cover?

Picture it:



Ex 2:

- a) How could Steven determine the unknown side of the triangle below?



- b) Find the length of the unknown side.

$\Delta 1$

$$\cos 24^\circ = \frac{x}{148}$$

$$x = 148 \cos 24^\circ$$

$$x = 135.20$$

$\Delta 2$

$$\cos 19^\circ = \frac{y}{181}$$

$$y = 181 \cos 19^\circ$$

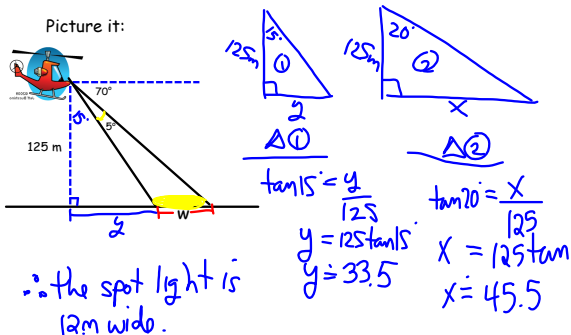
$$y = 171.14$$

\therefore The length of the unknown side is 306.3 units

Ex 3:

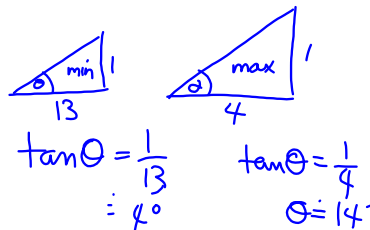
A searchlight is mounted at the front of a helicopter flying 125 m above ground. The angle of depression the light beam is 70° . An observer on the ground notices that the beam of light measures 5° . How wide is the spot on the ground?

Picture it:



Ex 4

A wheelchair ramp is safe to use if it has a minimum slope of $\frac{1}{13}$ and a maximum slope of $\frac{1}{4}$. What are the minimum and maximum angles of elevation to the top of such a ramp?



Hmwk: p 280 # 1, 2, 4, 9, 13, 14, 16

